

## **Remarks**

### **General Remarks and Discussion of Rejection**

Claims 1 to 48 are pending in this application. Claims 21 to 25, 28 and 29 are withdrawn.

### **Double Patenting**

On pages 2 and 3, the Office provisionally rejected claim 1 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 24 of co-pending appl. No. 10/972,294. The Office also provisionally rejected claim 5 over claim 31 and claim 6 over claim 32 of this application.

Applicants acknowledge these provisional rejections and will address the rejections, if appropriate, in a timely manner in accordance with MPEP §804 I.B(1).

### **Obviousness**

Starting on page 3, the Office rejected claims 1-4, 7-13, 19-20, 26 and 30-48 under 35 USC 103(a) as being unpatentable over U.S. Patent No. 7,101,703 to Palermo (hereinafter "Palermo") in view of U.S. Patent No. 6,830,848 to Fujiwara et al. (hereinafter "Fujiwara").

The Office expressed the opinion that Palermo teaches an electrofusion microelectrode comprising at least one area which acts as an electrode and at least partially formed by an outer limit which forms an inner chamber for receiving said solution. The electrode is said to be made from a conductive synthetic material which is doped with at least one conductive material. The rejection makes clear that the tube portion of the microelectrode is considered the "outer limit which forms the inner chamber" set forth in present claim 1 (see reference to col. 2, lines 12 to 14 of Palermo

in the Action). Applicants note that each term in a patent and thus each term in a patent application must be allocated the same meaning in view of the prosecution history (see, e.g. *Glaxo Wellcome, Inc. v. Impax Labs.*, Inc. No. 03-1013 (Fed. Cir. Jan. 29, 2004)). Applicants also note that the claims must be "given their broadest reasonable interpretation consistent with the specification." (MPEP §2111). In this context, the Office is referred to page 4 of the specification, starting on line 11 for the interpretation of the term "doped." The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach (MPEP §2111). In this context, the Office is referred to the usage of the term "doped" by Fujiwara.

The Office acknowledged that Palermo does not teach the specified dope concentrations.

However, the Office expressed the opinion that it would have been obvious to one of ordinary skill in the art to use a concentration of the particulate conductive filament between 50 to 80% w/w in the electrode taught by Palermo, because Fujiwara teaches constructing an electrode from a polymer doped with a conductivity-enhancing agent, wherein the weight ratio of the polymer active material and the conductivity-enhancing agent is preferably 50:50 to 90:10, to produce an electrode with a large amount of active material. The Office reasoned that the person skilled in the art would combine the teachings of Palermo and Fujiwara "to produce an electrode with a large amount of active material" (see page 4 of the Action, referring to col. 2, lines 1 to 3, of Fujiwara).

As noted above, the Office stated that Palermo discloses an electrode which is made from a conductive synthetic material which is doped with at least one conductive material. As noted above, the rejection makes clear that the Office considers Palermo's

tube "the outer limit which forms the inner chamber" (see, e.g., rejections of claim 7, 8 and 19). Thus, the Office considers the "conducting filament" of Palermo, the electrode.

After a throughout review of Palermo, applicants respectfully submit that Palermo does not teach a conducting filament having this composition.

Claim 1 requires:

"wherein said at least one electrode is made of a conductive synthetic material which is, or is at least based on a plastic material which is doped with at least one conductive substance" (*emphasis added*)

Considering the above stated deficiency in Palermo's disclosure, the combination of Palermo and Fujiwara would go well beyond an adjustment of dope concentrations in Palermo's electrode materials as set forth in the Office's rejection.

The Office stated motivation to combine Palermo and Fujiwara is that the person skilled in the art would combine their teachings "to produce an electrode with a large amount of active material" (see page 4 of the Action, referring to col. 2 lines 1 to 3 of Fujiwara).

Palermo discloses that the conductive filament (electrode) may be made of a variety of known electrode materials as well as of a carbon allotrope, e.g. graphite (column 1, lines 55-63). Thus, Palermo teaches, among others, a pure carbon electrode rather than an electrode "made of a conductive synthetic material . . . doped with . . . a conductive substance" as required by the present claims. In a pure carbon electrode, the concentration of the conductive substance is 100%.

The conductivity of Fujiwara's electrode is much lower than that of Palermo's conductive filament made from graphite.

Thus, there is no apparent reason why a skilled person should adjust the dope concentration or, more accurately (even though this rejection was not made), replace the pure carbon electrode of Palermo's microelectrode (comprising 100% conductive material) with Fujiwara's electrode.

Thus, applicants respectfully submit that (1) Palermo does not teach a conductive synthetic material as an electrode as set forth in the Action and (2) that the reasons set forth for combining Palermo and Fujiwara are better addressed by Palermo himself, undermining the motivation set forth by the Office.

Applicants respectfully submit that it is well established that it is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. See, e.g., *In re Kahn*, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (MPEP 2144 IV.). However, to provide a motivation to combine, the prior art as a whole should suggest the desirability of the combination (MPEP 2143.01 I.).

For the reasons stated above, applicants submit, that the Office has not established a *prima facie* case of obviousness.

In addition, applicants respectfully submit that Palermo discloses a microelectrode comprising a tube encasing a conductive filament (column 1, lines 36-46). The medial end of the tube, which makes up the electrode tip, may be sealed or open (column 2, lines 46-51). If the medial end of the tube is open, the cells (oocytes, Examples II and III; Fig. 2) can be aligned using aspiration or vacuum suction (column 3, lines 43-45).

Claim 1 requires:

"Container . . . which comprises  
. . . electrode . . .  
wherein the container is for electroporation or electrofusion . . . is . . . formed by an outer limit which forms an inner chamber for receiving said solution." (*emphasis added*)

There is nothing in Palermo that indicates that the inner space of Palermo's tube is designed to receive a solution or cell suspension. In fact, Palermo only describes his microelectrodes (each including a tube) to be used in pairs with the material to be manipulated being at the outer side of the microelectrode, that is, the tube. The space between the filament and tube is only described as providing an aspiration/vacuum conduct.

Applicants note that, independently of the two issues noted above, the Office has also not provided any argumentation how this deficiency of Palermo is cured by Fujiwara to support a *prima facie* case of obviousness.

Regarding claim 8, Palermo is said to not explicitly state that said synthetic material is the same plastic material as the plastic material on which said at least one electrode is based.

The Office expressed the opinion that it would have been an obvious matter of design choice to use the same materials as it appears that the invention would perform equally well with two electrodes composed of the same material.

Applicants note that claim 8 does not claim two electrodes made of the same material, but the material of the outer limit (If claim 10 was meant, applicants notes that the Office did not reject claim 8). Applicants further note also in this context that Palermo does not disclose a plastic material on which the electrode is based. Accordingly,

substituting Palermo's electrode with a doped plastic material and providing an outer limit made out of this plastic material is far more than a matter of design choice and reaches well beyond the fact pattern of *In re Leshin* to which the Office referred to support this rejection.

With regard to claim 11, Palermo is said to not explicitly state that said at least two electrodes are made of different materials.

However, the Office expressed the opinion that it would have been an obvious matter of design choice to use at least two electrodes of different materials as it would appear that the invention would perform equally well with two electrodes composed of the same material.

Applicants note that Palermo discloses microelectrodes comprising a conductive filament encased in a tube. Including a second conductive filament within said tube, would change the principle of operation of Palermo. In particular, Palermo teaches that the microelectrode is to be used to micromanipulate cells with two electrofusion microelectrodes (each comprising a filament and a tube) and delivering a direct current to the manipulated cells (col. 3, lines 58 to 62). Including two electrodes in one tube, whether of the same (claim 10) or a different (claim 11) material, would change the principle of operation of Palermo. It has been held, that if this is the case, the teachings of such references are not sufficient to support a *prima facie* case of obviousness (MPEP §2143.01, VI.).

Regarding claim 20, Palermo is said to not explicitly disclose a container arrangement comprising at least two containers being joined to build one.

However, the Office expressed the opinion that it would have been obvious to

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one of ordinary skill in the art to duplicate the single [container], since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

Applicants respectfully submit that the proposed modification cannot render the prior art invention being modified unsatisfactory for its intended purpose (§2143.01, V.). Here, the multiple container arrangement would render the manipulation described by Palermo in col. 3, lines 58 to 62, ineffective, if not impossible.

On page 6, the Office rejected claims 5 and 6 as being unpatentable over Palermo in view of Fujiwara as applied above to claim 1, and further in view of U.S. Patent No. 4,761,541 to Batliwalla (hereinafter "Batliwalla").

The deficiencies of the combination of Palermo in view of Fujiwara have been discussed above. Applicants respectfully submit that the Office has not provided any reasoning how Batliwalla does, and applicants submit that Batliwalla in fact does not, cure these deficiencies.

On pages 6 to 11, the Office rejected claims 12 to 18 and 35 to 45 as being unpatentable over Palermo in view of Fujiwara as applied above to claim 1, further in view of US Patent Publication US 20020028368 to Saito et al. (hereinafter "Saito").

Referring to certain ranges of dope as set forth in claims 12 to 18 and 35 to 44 (claim 45 was not specifically rejected), the Office argued that a further combination of Palermo and Fujiwara in view of Saito would be obvious since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. The Office refers to *In re Aller*, 105 USPQ 233.

The deficiencies of the combination of Palermo and Fujiwara have been outlined above.

In addition, it is well established that particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). As evident from the discussion of the rejection of claim 1, Palermo, to which the Office refers in this rejection, completely lacks such a recognition.

On page 11, the Office rejected claims 19 and 27 under 35 USC 103(a) as being unpatentable over Palermo in view of Fujiwara as applied above to claim 11 in view of U.S. Patent No. 5,676,646 to Hofmann et al. (hereinafter "Hofmann").

The deficiencies of the combination of Palermo in view of Fujiwara have been discussed above. Applicants respectfully submit that the Office has not provided any reasoning how Hofmann does, and applicants submit that Hofmann in fact does not, cure these deficiencies.

Regarding claim 19, referring to Fig. 3 of Palermo, Palermo is said to disclose a container wherein said outer limit comprises at least one opening for supplying said solution and at least one opening for draining off said solution. Hofmann is said to also disclose a container wherein said outer limit comprises at least one opening for supplying said solution and at least one opening for draining off said solution.

While the Office provides no reasoning why this claim is obvious in view of the discussed teachings, applicants note that the two open ends of the tube of Palermo the Office refers to are used for aspiration and vacuum suction, rather than for supplying

and draining off solution (col. 3, lines 44 to 46).

Any modification of Palermo to arrive at the invention of claim 19, is likely to render Palermo unsatisfactory for its intended purpose, which negates that there is motivation to make the suggested modification (MPEP §2143.01 V.)

In view of the above, applicants believe that the claimed invention is now in condition for allowance and sincerely urges the Office to call the undersigned at the number provided below to address any outstanding issue that the Office may identify.

The extension of time fees and fees for two additional claims are submitted herewith. However, the Office is authorized to charge any additional fees required to undersigned's deposit account no. 50-3135.

Respectfully submitted,

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